9.1.23

④ Demonstrați inconsistența următoarelor mulțimi de clauze folosind rezoluția blocării. Alegeți două indexări diferite pentru literalii din clauze.

$S_1 = \{ p_{(1)} \vee q_{(2)},\ \neg p_{(3)} \vee q_{(4)} \vee \neg r_{(5)},\ \neg p_{(6)} \vee q_{(7)} \vee r_{(8)},\ \neg q_{(9)} \vee \neg r_{(10)},\ \neg q_{(11)} \vee r_{(12)} \}$

$C_1 = p_{(1)} \vee q_{(2)}$

$C_2 = \neg p_{(3)} \vee q_{(4)} \vee \neg r_{(5)}$

$C_3 = \neg p_{(6)} \vee q_{(7)} \vee r_{(8)}$

$C_4 = \neg q_{(9)} \vee \neg r_{(10)}$

$C_5 = \neg q_{(11)} \vee r_{(12)}$

$C_6 = Res_p^{lock}(C_1, C_3) = q_{(2)} \vee r_{(8)}$

$C_7 = Res_p^{lock}(C_1, C_2) = q_{(2)} \vee \neg r_{(5)}$

$C_8 = Res_q^{lock}(C_5, C_6) = r_{(8)}$

$C_9 = Res_q^{lock}(C_4, C_7) = \neg r_{(5)}$

$C_{10} = Res_r^{lock}(C_8, C_9) = \square$

T.C.C. $\Rightarrow$ S_1 este inconsistentă

$S_2 = \{ \underset{(12)}{p \vee q},\ \underset{(11)}{\neg p \vee q},\ \underset{(10)}{\neg p \vee q \vee \neg r},\ \underset{(9)}{p \vee q \vee r},\ \underset{(8)}{\neg p \vee q \vee r},\ \underset{(7)}{\neg q \vee \neg r},\ \underset{(6)}{\neg q \vee r},\ \underset{(5)}{p \vee r},\ \underset{(4)}{\neg q},\ \underset{(3)}{\neg p \vee \neg q},\ \underset{(2)}{p \vee \neg q},\ \underset{(1)}{p \vee q} \}$

$C_1 = \underset{(11)}{q} \vee \underset{(12)}{p}$

$C_2 = \underset{(8)}{\neg p} \vee \underset{(9)}{q} \vee \underset{(10)}{\neg p}$

$C_3 = \underset{(5)}{p} \vee \underset{(6)}{q} \vee \underset{(7)}{\neg p}$

$C_4 = \underset{(3)}{\neg p} \vee \underset{(4)}{\neg q}$

$C_5 = \underset{(1)}{p} \vee \underset{(2)}{\neg q}$

$C_6 = Res_p^{lock}(C_2, C_3) = \underset{(6)}{q} \vee \underset{(7)}{\neg p}$

$C_7 = Res_p^{lock}(C_4, C_5) = \underset{(2)}{\neg q}$

$C_8 = Res_q^{lock}(C_6, C_7) = \underset{(7)}{\neg p}$

$C_9 = Res_q^{lock}(C_1, C_7) = \underset{(12)}{p}$

$C_{10} = Res_p^{lock}(C_8, C_9) = \square$

T.C.C. $\Rightarrow$ S_2 este inconsistentă